

ABSTRACT OF THE DISCLOSURE**HIGH PERFORMANCE VOLTAGE CONTROLLED POLY RESISTOR
FOR MIXED SIGNAL AND RF APPLICATIONS**

5

10

15

A voltage-controlled, variable polysilicon resistor is formed of polysilicon deposited in the first interlayer dielectric layer at the same time that polysilicon routing is created. The polysilicon resistor, which is formed of n- doped polysilicon, has three contact regions connected to the metal layers. A region at either end of the resistor is doped n+ and forms the positive and negative terminals of the resistor. A third contact region is located within the polysilicon region between the first and second contacts to form a Schottky diode such that application of a voltage to this contact forms a depletion region within the polysilicon region. The depletion region changes in size depending on the voltage applied to the third contact to change the resistance of the depletion resistor.